



C A L I F O R N I A   E N E R G Y   C O M M I S S I O N

# California Energy Commission's Transportation Vision & Program Synergies

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# The Intersection: Research Meets Deployment

## **Electric Program Investment Charge**

Transportation  
Research  
(~\$4M/3 years)

## **Natural Gas Research**

Transportation  
Research (~\$4M/year)

**Alternative and  
Renewable Fuel  
and Vehicle Technology  
Program**  
(~\$100M/year)

Transportation  
Demonstration and  
Deployment



## Benefits for California

- Cleaner air
- State leadership in greenhouse gas emission reductions
- Improve access to advanced, clean technology
- Grid Stabilization
- Reduce vehicle-grid connection technology costs
- In-state development of intellectual property
- Economic investment in California
- Job creation



## Major Collaborations

- ZEV Action Plan Implementation
- ARFVTP Investment Plans
- EPIC Investment Plans
- Natural Gas Research Budget Plans
- Research Roadmap Development Support
- Solicitation Project Selection
- Support Select Projects from R&D to Commercial Deployment



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## Projects Supported from R&D to Deployment





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## Clean World Partners Waste-to-Energy/Fuel



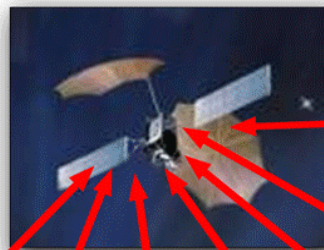




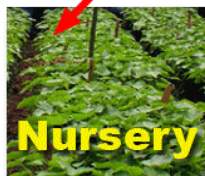
## CALIFORNIA ENERGY COMMISSION

### Biodico ARIES Biodiesel Production Facility

**ARIES  
Networked  
Biodiesel  
Production**



**Centralized  
Training  
Support**



**Nursery**



**Harvest**



**Oil  
Extraction**



**Oil  
Collection**



**Mini-MPU**



**MPU**

**Global Capacity for Distributed Production Facilities**



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## Cummins Westport Inc. Natural Gas Engine for Heavy-Duty Vehicles







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## Near Zero NO<sub>x</sub> Natural Gas Engine Development





## The Path Forward

- Continued Collaboration
- Improvements in Program Access
  - Increased outreach to expand participation in programs
  - Website enhancements and increased technology transfer
  - Webinars for potential applicants
  - Targeting regions to maximize inclusiveness
    - Ensuring benefits reach all communities



## Getting Connected

Energy Commission List Serves

<http://www.energy.ca.gov/listservers/index.html>

Recommended list serves: Altfuels, research, opportunity, epic, naturalgas

Alternative and Renewable Fuel and Vehicle Technology Program:

<http://www.energy.ca.gov/2013-ALT-02/>

DRIVE website: <http://www.energy.ca.gov/drive/index.html>

Energy Commission Research (for EPIC and PIER-NG research):

<http://www.energy.ca.gov/research/>